December, 1960 . . .

UNIVERSITY MICROFILMS
313 NORTH FIRST STREET
ANN ARBOR, MICH.

The Teachers College

JOURNAL

• *INDIANA STATE TEACHERS COLLEGE*

Volume XXXII **Number 3**

Terre Haute, Indiana

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Manuscripts concerned with controversial issues are welcome, with the express understanding that all such issues are published without editorial bias or discrimination.

Articles are presented on the authority of their writers, and do not necessarily commit the Journal to points of views so expressed. At all times the Journal reserves the right to refuse publication if in the opinion of the Editorial Board an author has violated standards of professional ethics or journalistic presentation.

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Teachers College Journal

volume XXXII . . number 3

Published October, November, December, January, March, and May by Indiana State Teachers College, Terre Haute, Indiana. Entered as second-class matter October 5, 1931, at the Post Office at Terre Haute, Indiana, under act of August 24, 1912

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DECEMBER COVER

Instructional television in the classroom. Pupils in six mid-western states will be provided with television instruction through the Midwest Program on Airborne Television Instruction beginning in 1961. The lead article in this issue of the Journal describes the program and the role of Indiana State Teachers College in this endeavor.

ISTC, A Resource Institution for Airborne Television Instruction

Jane E. Grills

Area Coordinator for the Midwest Program on Airborne Television Instruction and Associate Professor of Education and Speech

Indiana State Teachers College

WITH TELEVISION now available in over nine-tenths of the American homes and with more time spent in watching television than in the utilization of all other mass media combined, one can readily understand the considerable influence television has on 1960 living.

Certainly television has become an important medium to the advertiser; but isn't there another man with an even more vital message, the educator? Should not television be of even greater importance to him?

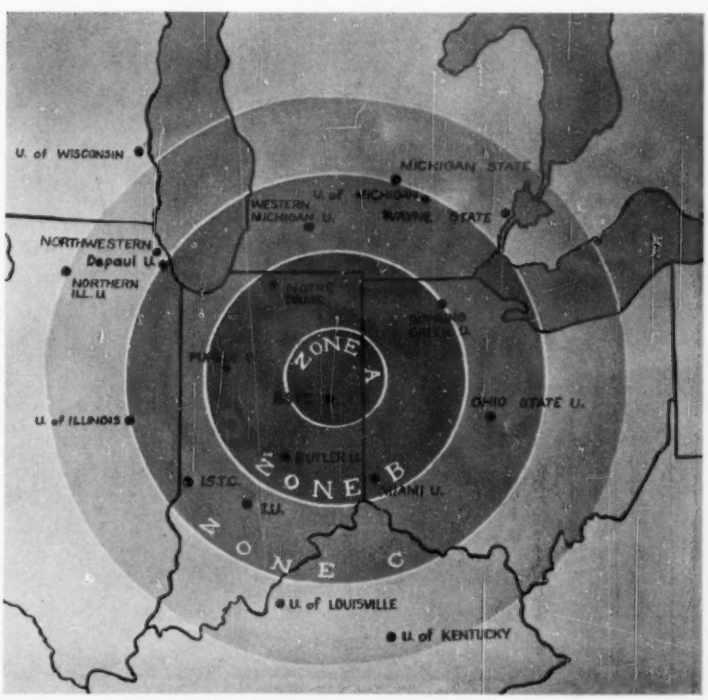
Educators and lay citizens, alike, are searching for answers to the speed-up and changes in all phases of education, changes which have been brought on by the technological and social revolution of the past three decades. Communities, state departments of education, and institutions of higher learning are turning, in increasing numbers, to television as an answer to some of their problems.

One could not recommend that schools and colleges invest time and money in using television as a tool for classroom instruction unless it can be proved that the television medium is:

1. An effective teaching tool equal or superior to classroom instruction.
2. Superior to other communication media as an aid to instruction.
3. Sufficiently interesting as an educational medium to attract and hold the attention of students.

Over one-tenth of the money appropriated for the educational use of television has been spent in conducting research in some phase of television's instructional value. While this amount would seem small when compared with funds used for research in medicine or physics, for example, it is an extremely high percentage when compared to other areas of education research. A compilation of some of the more important research findings especially applicable to points two and three listed in the previous paragraph may be found in *The Age of Television*[1] by Leo Bogart and *The Process and Effects of Mass Communication*[2] edited by Wilbur Schramm. Summarizing these findings, one may conclude that television combines the effectiveness of personal address, the impact of print, and the dramatic appeal and selectivity of radio and the motion picture.

Research findings concerned with the relative effectiveness of conventional and televised instruction, while available on all grade levels and in all subjects from typewriting to trigonometry, are not acces-



Probable coverage area for the Airborne Program

[1] Leo Bogart, **The Age of Television** (New York, Frederick Ungar Publishing Company, 1956).
[2] Wilbur Schramm (ed.), **The Process and Effects of Mass Communication** (Urbana, Illinois: The University of Illinois Press, 1954).

sible in a predigested form. However, one can synthesize the studies in both academic and technical subjects which have been done by the forty-eight educational television stations, the approximately 600 public school systems utilizing on-the-air television instruction, and the over 200 closed-circuit television installations in schools and colleges. Educational institutions, government agencies, and philanthropic foundations have all invested in these studies searching for at least a partial answer to spiralling costs, building shortages, the scarcity of competent teachers, and the need for a faster, a lateral flow of knowledge. This research shows the following advantages in using television as a tool for learning in the classroom:

1. High quality instruction presented by well-qualified teachers can be brought into each classroom.
2. Each pupil has a front row seat.
3. Resource materials and people are made available to all classrooms.
4. There is an increased use of libraries and resource centers.
5. The in-service training of teachers is encouraged and effected.
6. A re-evaluation of the curriculum and of course objectives is stimulated.
7. Teachers are released from excessive reliance on the text for materials and ideas.
8. Students develop skills in listening and note-taking.
9. There is a better organization of the class period with more time spent caring for individual differences.
10. Tardiness and absences have, in most cases, fallen off sharply.
11. Where large classes have been tried, anticipated discipline problems did not take place.[3]

Television may be incorporated into the instructional program in a number of different ways; however, these methods generally fall into three major categories: (1) as total instruction, the most frequent adoption of this practice occurs with the adult learner; (2) as a major resource, where the principal content of the course is presented over television and the television teacher shares with the classroom teacher and the textbook in the students' instruction; and (3) as a supplementary or enrichment program with materials that are valuable and pertinent to the course but not necessarily presented on a regular basis.

Television can never become a Mark Hopkins sitting across the log from his pupil; however, Hopkins was not confronted by hundreds to thousands of pupils to educate, nor did the ideas he was trying to convey involve the use of equipment he did not own or subject-matter he had not mastered.

Television, as an instrument of learning, is no more handicapped than the book which cannot compel reading, answer questions, correct errors, or give approval or chastisement. While many more astounding claims can be made for television as an effective medium of mass communication, one can, with a preponderance of research to substantiate him, conservatively state that television can be a fine instrument to convey ideas and an important tool for education.

It is with the knowledge of the tremendous potential television holds for education and with the realization of the high per pupil cost of a ground-based educational television station or network that the Midwest Program on Airborne Television Instruction was developed. Through funds given primarily by the Ford Foundation, Minnesota Mining and Manufacturing Company, the General Electric Corporation, and the Westinghouse Electric Corporation, this Program has been devised to present high quality television instruction as a major resource for the classroom teacher.

The televised courses will be transmitted from a DC6AB flying 23,000 feet over Montpelier, Indiana to a six-state area—Illinois, Indiana, Kentucky, Michigan, Ohio, and Wisconsin. The plane will be equipped with two transmitters and will broadcast on them simultaneously. There is a possibility of the number of transmitters being increased to six which would mean that the Program could offer a greater variety of subjects and, by the repetition of telecasts, allow a greater flexibility in the schedules of the participating schools. The cost of such an enterprise, an ever important factor in all phases of education, would be reduced to approximately one-third that of an equal coverage by ground-based installations.

Actually there is nothing new about transmitting a television signal from an airplane. Westinghouse Electric Corporation conducted a three-year experiment in "stratovision" soon after World War II. At this time, from a modified B29 flying at 25,000 feet, a satisfactory signal was received on television sets as far away as 225 to 250 miles. Engineers for the airborne project, however, have maintained a conservative estimate of good reception within a circle with a 150 to 175 mile radius from Montpelier. However, coverage beyond the area of satisfactory reception can be extended by means of ground-based translators (boosters).

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[3]Those interested in delving more deeply into the research finding in instructional television will find a wealth of material in the issues of the **Audio-Visual Communication Review,** published bi-monthly by the Department of Audio-Visual Instruction of the National Education Association, and the **NAEB Journal,** published bi-monthly by the National Association of Educational Broadcasters, 14 Gregory Hall, Urbana, Illinois.

While the money financing the first two years of the Program has been given by foundations and industry, the entire administrative organization and operation of the project has come from a democratically selected, representative group from the six states that are involved. For example, the decisions regarding the curriculum to be offered and the content of specific courses have been made by educational specialists selected by leading educators in these states. A similar group has selected the 17 television teachers for the first three semesters' courses from the over 350 applicants recommended by superintendents and professional teachers' organizations, who had sent in filmed sample lessons for their consideration.

The danger of interruptions in the schedule has been minimized by: (1) the purchasing and equipping of two aircraft with videotape playback equipment and two transmitters; and (2) basing the planes at different airports and arranging with other fields in more temperate climates for these DC6ABs to land in case of inclement weather in Lafayette, Indiana. In this way, by carrying the videotapes for more than one day's lessons, a plane always has enough gasoline at the end of a day's schedule to get down, refuel, and be back on target to meet the next day's schedule.

The planes will begin daily flights during December and January so that signal strength tests can be made in fringe areas, and so that schools that are preparing to use the pilot series, beginning January 30, may be sure that their equipment is operating properly and that UHF Channels 72 and 76 are received clearly. This pilot series will be telecast in the morning three hours daily throughout the second semester. During the 1961-62 school year, telecasts will be transmitted for a period of six hours each day.

The six-state curriculum policy and planning committee has decided on a distribution of the total number of courses to be offered with 40 per cent at the elementary level, 40 per cent secondary level, and 20 per cent at the college or university level. Since the pilot series is telecast only three hours a day, the offerings are, of necessity, curtailed. However, beginning January 30, 1961, twenty-minute elementary level telecasts will be given in the following subjects:

Elementary Science, Grades 3-4 (4 days a week)
Elementary Science, Grades 5-6 (4 days a week)
Arithmetic, Grade 6 (4 days a week)
Beginning French, Grades 3-6 (4 days a week)
Art, Grades 1-3 (2 days a week)
Art, Grades 4-6 (2 days a week)
Music, Grades 1-3 (2 days a week)
Music, Grades 4-6 (2 days a week)

Thirty-minute secondary offerings are:

Physics for Senior High (4 days a week)
Biology for Senior High (4 days a week)
American History for Senior High (4 days a week)
World History and Geography (4 days a week)
American Government and Civics (4 days a week)

On the college level, there will be two, thirty-minute courses available:

Mathematics (4 days a week) (Continental Classroom's Modern Algebra)
Chemistry (4 days a week) (Continental Classroom)

The most frequently heard argument against using airborne television instruction is that its adoption would mean losing local control—in other words, centralized education. A more realistic view would show that much of the independence of the local district in selecting what its children will learn has had to be made to conform, within certain limitations, to that of other communities and states due to the development of a scientific approach toward readiness for certain subjects, the development of subject-matter sequences, and the increased mobility of the American populace. Furthermore, publishers aver that five or six textbooks make up approximately 70 to 80 per cent of adoptions in any one subject throughout the nation. It is also important that one remember that, since the telecast is designed to be used primarily as a major (not total) resources in the classroom, it shares with the classroom teacher and the textbook in the instruction of the child. Consequently, there is no reason why instruction should be stereotyped when the classroom teacher adapts the resources and materials at his command to the needs of a particular group of students.

Actually, anyone who has studied the results achieved when quality television instruction has been effectively used in the classroom cannot foresee the failure of the Midwest Program on Airborne Television Instruction except on one level—the level of cooperation.

1. Will school systems and school districts lay aside their complete independence in scheduling to adhere to the necessity for a particular subject at a specified time? Even though educators recommend that televised instruction be used in only one class (or at the most two classes) per day, fitting television into the school schedule necessarily involves a certain amount of conformity on the part of the cooperating schools.
2. Will individual teachers take an intelligent approach to this offer of aid and use it to the best of their ability? The best use of the medium usually comes from an open-minded teacher who is willing to try his best to adapt to the medium and to see how television will work in his subject at his grade-level with his own students.
3. And will the people of the six-state area be able to work together to the extent that an inter-state compact can be formed and proved workable?

The evaluation that the individual classroom teacher makes of the effectiveness of television instruction

in his own classroom is most important. But of equal or even greater import is the over-all evaluation of the Program which is being established with provisions for judging at every level through every phase of the project, an on-going type of evaluation that should be completed by December 1962—sufficiently early to help people decide if they want to make this program a permanent part of our educational system. At this point if the states involved decide that it is desirable to continue the program on a form of inter-state agreement, the transition from foundation to public support will be merely one of paper-work.

Evaluation is a learning experience; and the eyes of the nation are on the Midwest and the conclusions that can be drawn from the evaluation of the Midwest Program on Airborne Television Instruction. Other areas are already considering similar facilities; and, if the Program is successful, they should be able to profit from our experiences in organization, administration, engineering, curriculum, instruction, and utilization. It is equally important if, through evaluation, it is proved that such a system of television instruction will not bring about the desired results; for we have still reached an important conclusion. We shall have eliminated one possible way of improving the quality of education and can turn our efforts to exploring other methods of up-grading our educational system.

The Midwest Program is a demonstration of teamwork between institutions of higher learning, public and parochial schools, state boards of education, educational television specialists and technicians, and citizens of local communities. The MPATI Council, the initiator of the Program, and its staff are attempting to discover the right combination of consulting, advising, and participating that will produce the highest quality television instruction and, with governors, legislators, and lay citizens, form the nucleus of a permanent organization.

An integral step in setting up this project so that the control, as well as the fullest and best use of the Program, is already vested with the people of the region is the establishment of a nucleus group of colleges and universities as resource institutions. It is essential that local school administrators have a center nearby to which they can turn if they require: (1) information and assistance in determining the role of television instruction in their school, (2) information regarding the equipping of classrooms, and (3) help in preparing their teachers to make the best use of this tool for learning. This is the role of Indiana State Teachers College in the Midwest Program on Airborne Television Instruction. Since much is still to be learned concerning the best uses of television in the classroom, the development of supplemental aids for the classroom teacher, and evaluative procedures for various aspects of the Program, the administration and faculty of Indiana State Teachers College have a most important function in this experiment.

The opportunity to assist the local school unit directly or to provide their administrators with qualified sources of information is given the resource institution's Area Coordinator, a person serving both on the staff of the institution and of the Midwest Program, who is an educator with training in the instructional uses of television.

As one can readily understand, local and regional representation and participation in the Midwest Program on Airborne Television Instruction is essential to the ultimate success of the project. Therefore, each resource institution has formed a committee from interested educators and lay citizens of the area. The job of being an area committee member is not an easy one, and members usually have only two identifying characteristics: (1) their interest in and concern for education and (2) their desire to improve the quality of education at the elementary, secondary, college, and adult levels.

There has been very little previous experience with the instructional uses of television in the twenty-three counties in Indiana and Illinois ISTC serves as a resource institution. With the exception of that section within a fifty-mile radius of Evansville and the Southwestern Indiana Regional Educational Television Council, very few residents of this area have seen or know anything about the use of television in the classroom. Therefore, the first duty of a committee member has been to investigate and to convince himself that instructional television, when used by capable, experienced teachers with adequate preparation, materials, and equipment, and aided by trained television production personnel, can provide a substantial quality boost to education, be of real assistance to the classroom teacher, and be of definite value to the vast majority of pupils. Television, in this case, is not a cyclopean attention-riveter that monopolizes the students' time and usurps the authority of the classroom teacher.

Once convinced of the value of the airborne program, committee members assist in: (1) encouraging schools to participate; (2) providing them with information and consultation services; (3) urging teachers to prepare to use the medium effectively in their classrooms through participation in workshops, conferences, and other methods of in-service training; and (4) taking leadership in the exploration of ways that airborne television instruction can be retained if the experimental program proves successful. One of the committee's most important functions is to serve as a liasion group between the users of the program and those who manage it.

Most Area Committees have a membership of 30 to

35; however, since Indiana State Teachers College serves the largest territory of any resource institution, its Areas Committee has forty-nine members:

Elementary Education Representatives
Miss Alice Femyer, Mr. Carlton Franks, Miss Ruth Staninger

Secondary Education Representatives
Rev. Joseph V. Beechem, Mr. Harry Johnson, Mr. J. J. Maehling, Dr. Charles E. Rochelle, Mr. J. O. Smith

School Administration Representatives
Mr. Charles A. Bush, Mr. Ray Duncan, Mr. Russell Garrigus, Mr. Royce Kurtz, Mr. Charles Pierson

College or University Representatives
Mr. John Bloxsome, Dr. William E. Engbretson, Dr. Charles W. Hardaway, Mr. Joseph Kish, Mr. Russell P. McDougal, Dr. Clarence Morgan, Dr. Wayne E. Schomer, Dr. Carlos Watson.

College or University Administration
Dr. Isaac Beckes, Dr. Raleigh W. Holmstedt

Adult Education Representatives
Mrs. Paul H. Isenberg, Mr. Stillman K. Taylor

P.T.A. Representatives
Mrs. Virginia Bader, Mrs. Catherine Carmichael, Mrs. Rex Cork, Mrs. Hugh Dillon, Mrs. Henry J. Luerssen, Mrs. Sam Roberts, Mrs. J. O. Wright.

School Board Representatives
Mr. Lester Cagle, Mrs. Taylor Chapman, Mrs. Max Goodman, Mr. Douglas H. McDonald, Mr. Kenneth W. Weyerbacher

Communication Media Representatives
Mr. James Benham, Mr. Joseph M. Higgins

Lay Citizen Representatives
Mr. Harry E. Burns, Judge Frank Fisher, Mr. Donald Foltz, Mr. John Illyes, Mr. Clarence McCormick, Mr. John Murphy, Mr. Robert Schaad, Mr. Lyle Schmidt, Mr. E. J. Whalen, Mr. Joseph Williams.

In its capacity as a Resource Institution for the Midwest Program, Indiana State Teachers College has, to date, sponsored three projects:

1. July 11-15, 1960, the first instructional television workshop was held on the campus. With 78 full-time registrants (43 for college credit), attendance at these sessions varied from one hundred to nearly three hundred. Special consultants during this orientation program for teachers, principals, and superintendents were Mrs. Elizabeth Marshall, Assistant Director of Radio and Television in the Chicago Public Schools, and Mrs. Vera Hopping, Director of Elementary Education in the Indianapolis Public Schools. Also assisting during the week were leaders in the production and administration fields of educational television as well as experienced studio and receiving teachers currently involved with instructional television.
2. On November 17, 1960, over three hundred principals, superintendents, school board members, school trustees, and officers of parents, organizations attended an administrators' workshop in the ISTC Student Union Building. At this session the major manufacturers of television distribution and receiving equipment exhibited their products. The day's discussions centered around questions involving the equipping of elementary and secondary schools for instructional television and the administering of such programs.
3. A Saturday briefing session was held November 19, 1960, for the teachers and principals of the Terre Haute and Vigo County school systems who will be joining the airborne program January 30, 1961. Following a pattern that is to be repeated in other counties served by the College, background material was provided for both the use and evaluation of television in classroom instruction, a demonstration of a social studies lesson with television used as a major resource was given by Miss Anna Carle and her 5th Grade class from ISTC's Laboratory School, and an opportunity was given for the group to hear and question both a studio and a classroom teacher in the Evansville system who have been working with television instruction for the past two and a half years. Over a hundred and fifty educators participated in this activity.

A survey was conducted during October to determine the number of schools that expected to be equipped in time to use the three hour pilot series in January, 1961. The results of this poll in Indiana State's twenty-three counties shows that 68 schools are intending to use some instructional television from the airborne project. A further breakdown of this poll shows that almost 500 teachers and 23,000 students will be involved in the experiment from this area.

Indiana State is also participating in the airborne experiment in instructional television:

(1) Through the cooperation of faculty members of the College's Sociology Department and School of Education who are engaged in research related to the evaluation of the project.

(2) The College will operate another summer workshop for teachers, principals, and superintendents during the week of June 26, 1961. Since the MPATI plane will be flying during that week, workshop participants will be able to study the utilization of televised instruction using the actual

Continued on Page 89

The Function of The Laboratory School in the Teacher Training Program

Tom C. Venable
Professor of Education and Psychology,
Indiana State Teachers College

THE ON-CAMPUS laboratory school has been a part of teacher education programs in this country for over one hundred years; and during its growth to its present status, it has proved its worth. Few educators would argue against having such institutions to provide the teacher-trainee with dircet, first-hand experiences with children in actual school situations. But as needs have changed and our beliefs about the preparation of teachers have been modified, our concepts of the purposes and functions of the laboratory school have had to be continually examined and evaluated.

Once thought of as a demonstration school, the on-campus school later became the center for student teaching, and on some campuses this function is still the dominant one. But in more recent years the task of the laboratory school has been greatly enlarged with the building of the program around "laboratory experiences." This term is deemed to include a vast variety of activities, ranging from the students' first acquaintance with the laboratory school situation to post-student-teaching work in the laboratory school classroom.

To list all of the functions a laboratory school may serve would be impossible; however, the following may be considered as the major functions:

1. To serve as a model school situation for visitation and study,
2. To provide college students with a total school picture for orientation to their training.
3. To carry on educational research.
4. To provide a laboratory situation for study of human growth and development.
5. To provide opportunity for group and individual observation of methods of instruction for both general and special methods courses.
6. To provide for pre-student-teaching participation in actual classroom practices and procedures.
7. To act as a supply of resource persons for college classes.
8. To provide for student-teaching.

This list could be lengthened to the extent of the detail which we might wish to provide. A thorough study of the extent and kinds of laboratory experiences which the laboratory school can provide can be found in the thirty-fourth yearbook of the Association for Student Teaching (1)and in Hughes' study (3).

The Laboratory School of Indiana State Teachers College has paralleled this national picture throughout its existence and today faces the same problems that other laboratory schools face. As early as 1870 "model classes" were taught at the Normal School, and in 1900, a Training School was established as a separate unit of the college. In 1935 the present Laboratory School was put into operation (6). From purposes of demonstration and observation the school moved through a stage of serving as the center of student-teaching to its present purposes which emphasize the laboratory experience function. In this evolution of purposes the Laboratory School has not completely left behind its previous functions and may now be described as a multi-purpose institution.

Indiana State Teachers College Laboratory School has an enrollment of approximately seven hundred students in its twelve grades plus its kindergarten and nursery school. The school serves a definite attendance area of the city of Terre Haute and in some cases pupils from other areas may be admitted if it is felt they can profit more from schooling there than from that offered by their own school. The attendance area represents a wide range of socio-economic level; some students are from backgrounds of indigency, some from homes where there is a maximum of opportunities provided for the children. The school population is typical of that which is to be found in most urban schools. The staff of the school is composed of forty-six full-time teachers; twelve are in regular elementary grades, and twenty-seven are in the junior high and high school. There are also special teachers for nursery school and kindergarten, for classes for mentally retarded and physically handicapped, and for special subjects (music, art, and physical education) at the elementary level. There are also several graduate assistants to help with the program. In some cases the Laboratory School teachers are responsible for college classes as well as their Laboratory School duties. In all but a few instances the staff is superior in education and experience to those of most public and private schools of the state.

The course of study is highly diversified, and in most areas there is ample opportunity for the pupils to pursue work in keeping with their interests and needs. The schedule of the elementary school is built on the practice of the children spending the greater part of each day with their regular classroom teacher and having special teachers for their art, music, and physical education activities. High school classes meet seventy minutes per day, four days a week. The program is arranged so that other classes meet on a "diagonal plan" for the fifth day.

The staff is regarded as a definite part of the college faculty; teachers hold rank on the same basis as college teachers and serve on committees of the college faculty council. One is impressed in talking with them by the extent to which they have a sense of belonging to the college as a whole.

Let's look at the function of Indiana State Teachers College Laboratory School today. Its role as a definite factor in the teacher training program has been a constantly expanding one. Nevertheless, in being a multipurpose institution some confusion has come into existence as to the relative importance of the various functions which the school performs. During the school year of 1956-57 a Council on Professional Laboratory Experiences was appointed to study use of the school in teacher training. The findings and recommendations of the council pointed the way toward possible future directions and problems (2 and 4). Among the more significant findings were these:

1. Almost twenty-five per cent of the total college staff uses the Laboratory School facilities. As could be expected, the Department of Education and Psychology uses the Laboratory School almost twice as much as any other department of the college.
2. Group and individual observations are the most common types of activity in Laboratory School use by college students.
3. There is a need for administrative and organizational changes before more extensive use of the Laboratory School can result.
4. There is a need for closer working relationships between the college staff and the Laboratory School staff. There is often expressed a feeling of frustration at the lack of such a relationship.

Perhaps a better view of the functions of the Laboratory School in the teacher training program can be gained by examining the extent and kind of use of the school during one selected college term. For reasons of convenience and recency, the spring semester of 1960 has been chosen.

During this semester twenty-three student-teachers were placed in the Laboratory School; eighteen at the secondary level, five at the elementary level. There were twenty group observations by college classes, and college students spent a total of 3650 man-hours in individual observations for methods classes. Two participation programs are particularly noteworthy: 175 students in the course in human growth and development spent ten hours each in participation in the classrooms of the Laboratory School, and 45 students in reaching methods courses (the number is usually greater) spent twenty hours each in such laboratory practices. In addition there were several cases in which students in methods classes spent observation and participation time in the Laboratory School for which no records were kept. A fair estimate would be that a total of more than 15,000 man-hours of laboratory experiences were carried on in the Laboratory School during the spring semester of 1960. This number of man-hours, coupled with the diversity of types of experiences, is evidence of the great contribution of the Laboratory School to the teacher-training program of the college.

But as was previously noted, the Laboratory School of Indiana State is not without its problems, and these deserve our careful consideration.

The first of these problems concerns the definition of the function of the Laboratory School. The confusion which exists as to its primary and secondary functions should be dealt with before any conclusions as to possible future directions can be made. Mention has already been made of the study of the Council on Professional Laboratory Experiences of 1956-57. This report pointed up the extent to which the Laboratory School is used and the diversity of purposes which it serves. Since that year the demands on the Laboratory School have been increased greatly, but the pattern of use has varied little.

Problems have arisen which demonstrate the lack of agreement as to the function of the Laboratory School. In some cases competition has arisen between college instructors as to who has "first choice" in using the Laboratory School for a certain period. In other cases Laboratory School teachers have been reluctant to accept college observers and participants. Recently there has been an expressed interest in research and experimentation by the Laboratory School staff, and there is some concern as to how this fits in with the other functions of the school.

All of these problems are indications of the need for a clear-cut statement of policy as to the functions of the Laboratory School. Such a statement should serve as a guide in planning future programs and should be continually evaluated and changed in terms of the changing needs of the teacher training programs.

In a questionnaire conducted in the spring of 1960, Laboratory School Teachers were asked to express their

opinions as to the purposes of the school. The teachers ranked in importance the five major functions the school now performs. The average rank for each of these functions based on a "1" through "5" scale was as follows:

Observation and participation for college methods classes 2.48

Experimentation and research 2.52

Observation and participation for child study classes 2.76

Provision of a model school for visitation and study 3.18

Student Teaching 4.06

When these teachers were asked to evaluate the various types of activities which they were asked to carry on with college students, they gave their highest evaluation to individual observation and participation experiences. Group observations and supervision of student teaching were both ranked significantly lower.

To summarize the opinions of these Laboratory School teachers, we can conclude that they feel that the student teaching function of the school should be discontinued. There is little agreement, however, as to the type and extent of other laboratory experiences which should supplant student teaching.

A definition of the function of the Laboratory School and a clarification of who is responsible for what and to whom is the most pressing need facing the Laboratory School program today. All other problems are related to this central one.

A second problem concerns the increasing demands made on the Laboratory School by the college. The effect on increasing enrollment of the college is central to this problem. In 1950 the college enrollment stood at 2300; in 1960 the figure had climbed to 4300; and by 1970 it is anticipated that the enrollment will be 7000. Approximately 75 per cent of these students are or will be in the teacher-training course of study. Inasmuch as the Laboratory School facilities will remain constant the burden on the school and its staff will become greater and greater. Judicious decisions will have to be made as to when the saturation point has been reached and what functions are most important to maintain. The increase in college enrollment may cause greater competition among college staff members as they ask for services from the Laboratory School. The thorny problems thus arising can only be solved in the context of the first problem, that of defining the functions of the school.

In the questionnaire answered by the Laboratory School teachers there was unanimity expressed that the Laboratory School should be an integral part of the teacher training program. It is encouraging to note that 90 per cent advocated a broader use of the Laboratory School by the college. There were, however, a great number of qualifying statements made, most of which expressed concern over the approaching limit to the demands which the college can make on the Laboratory School.

A third problem concerns the administrative mechanics involved in the use of the Laboratory School by the college staff. The means of getting the students into the Laboratory School classrooms, the paper-work and the leg work involved, and similar problems can in themselves serve as inhibiting agents to the use of Laboratory School facilities.

A few examples might be helpful. The fact that the high school schedule and the college schedule do not jibe causes much reduction of the use of the Laboratory School for observation purposes. The seventy minute period presents scheduling difficulties which often seem insurmountable. It also makes it impossible for the college class to see an entire class period of any subject. College students often have an observation with a fragmentary concept of what the class was all about. In some cases errors in interpretation occur because of the college students' failure to get the whole picture.

The personal contacts needed for some Laboratory School wook sometime make too great a demand on the time of both the Laboratory School and the college teachers. Laboratory School teachers like and need to know why college students are visiting their classes, but college teachers often express concern that they need to have students visit without special plans being made for their visits.

The paper-work involved has been greatly simplified; however, more standardization of procedure needs to be followed. It is very difficult to determine the extent of Laboratory School use inasmuch as each college teacher has his own system of caring for observations. A standardized procedure for setting up and reporting Laboratory school experiences would aid in evaluating current procedures and in carrying on future research.

A final problem is that of communication between the Laboratory School Staff and the college staff. On several occasions laboratory experience programs have broken down because of misunderstandings between college teachers and the Laboratory School personnel. In the questionnaire which is the basis of this article, the Laboratory School teachers were asked if they felt the communication between the people involved was adequate. Only 9 per cent felt that the communication is sufficient. There were frequently expressed dissatisfactions with the teachers' not understanding the reasons students were sent for observation, the college teachers' not doing follow-ups, and the Laboratory

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1960 Distinguished Alumni Award Winners . . . . .

The coveted Distinguished Alumni Award was presented to five outstanding graduates of Indiana State at the morning Convocation, Saturday, June 11, 1960. Shown above are the happy recipients. Seated Mr. William E. Wilson, '31, State Superintendent of Public Instruction, Indianapolis, Indiana and Dr. Cecilia Schuck, '22, Professor of Research in Home Economics Department of South Dakota State College at Brookings, South Dakota.

Standing from left to right are Dr. Will E. Edington, '09, Emeritus Professor and Head of the Department of Mathematics and Astronomy, DePauw University, Greencastle, Indiana; Dr. Edgar L. Morphet, '18, Professor of Education, University of California, Berkeley, California and Dr. Mark C. Schinnerer, '20, Superintendent of Schools, Cleveland, Ohio.

The following articles have been provided by a number of the 1960 Distinguished Alumni.

What Are "Fads" in Education?

Edgar L. Morphet
Professor of Education
University of California, Berkely

DURING THE PAST few years every American probably has heard some reference to, or has engaged in a more or less heated discussion about "fads and frills" in education, — especially in the public schools. What are fads and frills?

According to the dictionary a *fad* is . . . . "a custom . . . . followed for a time with exaggerated zeal." It is "a whim" or "a craze." A fad, then, is something that may not be defensible or, at any rate, may not justify the attention or emphasis it receives. It may be an idea that has attracted attention and gained a following before its merit or value has been determined. It should neither be generally accepted nor rejected because it has been labeled but should be studied and evaluated in light of the available or ascertainable evidence.

A *frill* is ". . . a showy superfluity." It may be fancy columns, or ornate gables on an 1890 style school building; an inter-communication system that gratifies a principal but disrupts and annoys teachers and classes; or something else that gets in the way of or does not contribute to the development of a sound educational program. However, the fact that someone refers to something as a "frill" does not mean that it belongs in that category. It should be accepted or rejected on the basis of what the evidence shows in terms of the situation in a particular community or for a particular group of students. Thus, foreign language might be a frill for some students under certain conditions but would be an essential for others.

This article is concerned primarily with *fads* in education rather than with *frills*. There unquestionably have been and still are some fads at least in certain schools and colleges. The basic reason is simple: not enough is known about certain aspects of education to prove conclusively what is right or best. A theory or idea that sounded promising has been considered worth a trial, but the situation is changing. Numerous research studies have provided valuable, and in some cases, conclusive information. Experience has also shown that certain ideas are good and will contribute to learning and that others are of little or no value. As a result, there is less excuse or justification for fads at present than some years ago. However, research will probably never prove what philosophy or point of view regarding scope and objectives of education is best.

Even conclusive evidence that some idea or procedure is less desirable or effective than another will not assure that the best or wisest will be observed by everyone or even by a majority at a particular time. Large segments of the human population seem to be susceptible to fads in many aspects of life. Many people—even nations—have followed courses that inevitably resulted in handicaps or even harm to themselves or to others.

A fad often represents an extreme position or an exaggeration of something which in less extreme form might have considerable merit. It is often a search for a simple solution to a complex problem or an acceptance of something as a panacea when in reality there can be no panacea.

In the light of present day knowledge it is easy to identify some educational fads of past generations—practices that were "followed for a time with exaggerated zeal." Three will suffice for illustration:

1. *Requiring students to memorize what was in the textbook or what the teacher said and judging their progress by their ability to repeat exactly what they had memorized.* This constitutes a very narrow and limited concept of study and learning. It fails to recognize the importance of understanding, as contrasted with mere memorization, and the need for helping students learn how to analyze and think through problems. There is a place for memorization and for testing to determine the extent of factual learning, but this does not constitute a panacea or a solution for the basic problem.

2. *Assuming that students who learn how to solve problems in geometry or who take a course in Latin have "trained" their minds and can transfer the training to other fields.* The general idea of "transfer of training" has been larely discredited by research except in areas where there are common elements and the teaching or other experiences have helped students to recognize those elements. Students may and should be helped to learn to think or reason in an area but cannot be expected to develop this ability by taking one subject matter course, no matter how great its prestige.

3. *Expecting all high school students to take college preparatory courses.* High school students have widely varying abilities and needs. Many should take college preparatory courses, but for others such courses would be largely a waste of time and would fail to meet their need.

Many such fads of prior years are no longer accepted by most people because the evidence shows they are not defensible. Like the adage "spare the rod and spoil the child" they represent extreme points of view which still have some adherents in spite of evidence to the contrary, but are no longer accepted by a majority of the people. Unfortunately, a few have embraced almost the opposite extreme as their panacea, even though it is equally indefensible.

A few ideas or customs "followed with exaggerated zeal" at the present time by school systems or by persons interested in education in various parts of the country are as follows:

1. *Small and inadequate school districts are continued on the assumption that their perpetuation is the best way to assure local responsibility for and control of education.* The evidence from studies shows that such districts are expensive, inefficient, and that most of them are not in a position to exercise bona fide responsibility. The educational program is handicapped and local responsibility jeopardized by the continuation of such districts.

2. *A quality program of education is being provided when national norms are achieved in a school system.* National norms, whether on achievement tests or for other aspects of the program, constitute little more than a record of what has been accomplished in the past. They do not indicate the potential of the children of the nation for the future, nor even of individual students for the present. The objective in each school system should be to provide a program that will assure the development of each student in accordance with his needs and potential.

3. *Every high school (perhaps every junior high school) should have winning teams in football, basketball, and other fields of sport.* The schools are not entirely responsible for this situation; in many cases the community demands that this be accomplished, often with little regard for its effect on the educational program. The remedy is not the abolition of athletics or of physical education but rather the development of a more balanced perspective,—a decrease in "the exaggerated zeal" which is accorded to this one aspect of the program.

4. *The best way to assure better schools is to criticize teachers, administrators, teacher preparation institutions, and professional educational organizations at every opportunity.* This idea seems to be accompanied by the assumption that anyone concerned about education is competent to judge, condemn, and even propose procedures that are supposed to provide panaceas. Every psychologist knows, or should know, that continued sharp criticism is likely to affect adversely the morale and effective functioning of any individual or group. Criticism has its place but the most helpful and traditionally American procedure is to find ways to cooperate in identifying problems and needs, agreeing on goals and objectives, and proposing solutions. The problems of the schools are, in part, the problems of the community, and of American society; and everyone, whether he is an educator or a lay citizen, has a potential contribution to make to the solution of those problems. This contribution can be made, however, only by those who are willing to learn about the possibilities and limitations, and to cooperate in a constructive endeavor to agree upon and bring about the solution of important problems.

What may happen to the educational program during coming years should be of as much concern as what is or is not happening at the present time. Everyone should be disturbed about any tendency to continue a practice merely as a fad or to introduce new fads into education. Such developments are imminent unless a larger proportion of the citizens than at present are willing to take the time and make the effeort to study the situation, obtain the pertinent factual information, and insist on a balanced and defensible program.

Some of the potential fads may be encouraged by teachers, administrators, and even professors of education, who have not developed the depth of understanding and breadth of perspective necessary for a sound evaluation of needs and possibilities. Others are promoted by the new "experts" in education; that is by national or local "authorities" who advocate, for example, that European type schools and programs be substituted for those developed by the people of this country; who propose that local boards of education be abolished; or who believe that a system of national examinations would provide a panacea. Some of these ideas are so extreme that few people thus far consider them seriously. However, others, on first impression, will probably sound reasonable to many and, unless there is more careful study of the proposals, are likely to be adopted by some state legislatures or local boards of education. Among the ideas that could easily become fads are the following:

1. *The only defensible purpose of education is "to inform the mind and develop the intelligence."* This belief, if accepted by the American public, could have a profound effect on the entire school system. Logically

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The Chances For Survival Of Public Education In The United States

Mark C. Schinnerer
Superintendent of Schools, Cleveland, Ohio

IN RECENT MONTHS, I have had three experiences which have impressed me very much. I'll never be the same person I was before these experiences. Indeed, just about everything I'm writing here grows out of them.

The first of these was a trip to the Soviet Union to take a hard, searching look at the school system. What I had read of their schools was partly debunked by what I saw, and partly confirmed. One thing is a certainty. When the decision is made to do something in the schools, nothing is permitted to stand in the way of getting it done. There is no foot-dragging, no wrangling, no discussion, and no budget pinching. But, the most impressive thing of all is their complete dedication to education. When I use the word "education" in referring to the USSR, I use it without quite the same meaning I intend with reference to ours, but it certainly does mean preparation or education for Soviet citizenship. The government is completely dedicated to education. This is true, also, of the parents, and this is transmitted to the children. And the children in school are working harder than any other group I saw in the USSR. In priorities, education has the second highest of all, being second only to the military and the hardware of war.

The slogan of the Soviet Union is REACH AND OVER-REACH AMERICA. And, they say, the way they are going to do it is through education. I think that this is basically sound. The only way to refine natural resources is through human beings. The human beings must be prepared to do these things through education. It is just that simple. How did we come by the machines and the gadgets and the material things we have? Why, educated people produced them. The only way we can move ahead and meet the challenges of the other peoples of our times, is through the preparation and education of our people. Education is the goose which lays the golden eggs.

The second of my three impressive experiences was my attendance at the White House Conference on Children and Youth. There were more than 7000 delegates present and thousands more of observers. As far as ideas and suggestions were concerned, including recommendations, these mounted to some astronomical figure, arrived at by taking some unknown number and multiplying it by 7000, the number of delegates.

I spent my time in the meetings devoted to the problems of education and their solution. Present were a few school people, but mostly laymen. If you think that school superintendents want to spend a pile of money on education, you should have heard some of the expenditures suggested by these laymen. What it all boiled down to was a demonstration of an intense desire on the part of those people to provide for all girls and boys in the United States the best education in the world. Of course, all the things which were suggested couldn't possibly be put into effect, partly because some were in conflict or mutually exclusive, or because these isn't enough time in a school day or a school year or a school life to do them. But the intent to accomplish, the desire to make progress, the dedication to high aims, — these were unmistakably present in those meetings. I wish that there were some way in which this climate could condition and enlist every citizen of our country. Well, that was a wonderful experience. I came away feeling that God's in His Heaven and all's well with the world, but knowing that it is a far cry from the practical levels of accomplishment. And then, BOOM! The third experience. A truly traumatic experience, if I've ever had one— and I have had more than one.

The Cleveland Board of Education put two levies on the ballot for the people to decide at the Primary Election on May 3. One of them was a levy for school construction; the other for operating purposes.

Heavily organized opposition came from the Cleveland Chamber of Commerce and certain real estate groups. It was a well-organized campaign on both sides, not a little money was spent, and it was a dirty campaign.

The important point, pertinent to the theme, is that we lost both levies. Now, the fact that we lost those levies has little to do with the chances for survival of public education in the United States. It is just one incident in a great many which, in their totality, suggest

the need to examine these chances. In fact, about 30% of the school levies in my state are losing these days.

Now, there are several ways in which the survival of public education in the United States could be threatened, among them a change in political philosophy which would result in a change in government. I wish to discuss, however, only one threat, and that is the one which comes from a possible failure to give financial support to education. Let's consider some of the elements in this complex.

First, there is the oppressive system and amount of Federal taxation. In round numbers, four out of every five dollars of taxes collected, in every form, go to the Federal government. It should be added, to complete the division, that half that other dollar goes to state government, while the other half dollar remains in the local community for the support of all forms of local governmental services, including the schools. When one considers, for instance, that less than 20 cents of that local half dollar in Cleveland is for the public schools, while more than 20 times that amount goes to the Federal Government, he gets some idea of the overpowering impact of Federal taxes. Of course, most of that money goes for the military, including foreign aid. I have no criticism of that, as I assume that it is necessary, but I am impressed with the much lower priority which is assigned to education. The important thing here, however, is that the individual citizen and voter has practically no say on Federal taxes. The decision is so far removed from him that he has no effective voice. Neither does he have much to say about state taxes. This is legislated by the State Legislature, again considerably removed from the taxpayer. At least, the individual taxpayer has no chance to vote for or against a specific state tax proposal. Only at the local level, therefore, does the voter have a chance to express his frustrated wrath against taxes. It takes a very dedicated guy, a thoroughly-sold person, to step into a voting booth, with the curtains drawn so that no one can see his vote, who has heard time and again on the radio and has seen advertisements in the newspapers, even the local ones, and the ones in his native tongue, to the effect that it is taking his money from him when it isn't necessary; it takes a determined person to vote FOR something which will cost him money, when he has had such loud support of his voting against his biggest enemy—taxes. Really, when I add to this the fact that a great many people have no children in the schools and it seems pretty far-fetched to them that they are personally affected, I am somewhat surprised that any school issue passes. That they do is a tribute to the foresight of most of the people who live in the community concerned.

There is another element to this taxing business. Apparently, at the local level, we are wedded, until death do us part, to a method of taxation which sets up real estate as the prime source. I note, however, that the biggest bargain the taxpayer receives, in terms of service for the money paid, is in his local taxes. Yet, we are very reluctant to look elsewhere for the money to support local services. Of course, the Federal government has commandeered many of the natural sources of revenue. A payroll tax or an income tax for support of local government would take some of the pressure off real estate and reduce the resistance of property owners to pay more real estate taxes for support of the schools.

Another thing which puzzles me is the confidence with which most people view as a certainty the notion that school will continue to keep, regardless of the support provided. There apparently is a double standard in this "you-get-what-you-pay-for" business. Nobody expects a better house, or a better car, or a better suit, or a better roast, or better medical care than he pays for. But, for some reason, nobody has the notion that school will not continue to be in business with or without enough money to do the job. I suppose this is because for most of our history, teachers and others in the profession, have subsidized education in any amount necessary to keep it up.

Whenever the school income is not sufficient to provide all the school services the people have been accustomed to, then those services should not be provided. Certainly, I do not think that the profession should take up the slack and make public education survive, when the stockholders of the schools, the voters, have indicated a contrary desire.

One other area of consideration, and I shall have finished. It is time for us to re-examine and re-arrange our standards of values. I mentioned earlier that the USSR gave second highest priority to their school system. Are they wrong about this? But, consider its standing in our country, a country in which the very foundations rest upon an informed and able electorate. In the Soviet, only the new class needs to be informed; all the others are just to follow orders. Yet, even there, they give this high priority to the schools. This is what we are up against. Unless we meet them on this ground, we'll eventually loose everything. Many years ago, H. G. Wells said, "Human history comes more and more to be a race between education and catastrophe." Never has this been truer than it is today.

Where in our standards of values do we place education? Is it above roads? Cosmetics? Liquor? Entertainment? Where is it? Do we merely give lip service to education?

Let me quote from the may issue of OVERVIEW, an article by Harold F. Clark: "When Elvis Presley

was recently discharged from the United States Army, his agents told reporters he had made only $1,600,000 during the past year. (This was from records, endorsements, etc.)

"On the day of this announcement a celebration was held in honor of a teacher who had spent 39 highly successful years in a well-to-do Kansas community. At a dinner given in her honor, the teacher was presented a scroll stating that she had made a great contribution to the young people of the school and to the intellectual and moral development of the entire community. She had been singled out as one of the most successful teachers in that section of the country. She received a certificate." (Elvis Presley received $1,600,000.)

I once read of a football coach, successful in winning games, for whom the alumni took up a collection. They had enough to buy the coach a Cadillac. They had a little left over, so they bought the President of the University a watch.

Replace a Western one night on TV with an important cultural presentation, and listen in on the complaints received at the TV station.

I heard of a father whose son and a neighbor's son disappeared quite suddenly, at the same time the father's new Buick disappeared. Three days later, the Tampa police called to say that they had his son in custody. What was the father's first question? "Is my new car damaged?"

Well, in this welter of strange values, what chance for survival has public education in the United States? It depends upon the people, community by community. There is evidence in some places in the South, that the people prefer to give up the public schools to giving up segregation. Here and there around the country, all kinds of public education are having a hard time to survive. Whether or not the sores will become speading cancers will depend upon the people. Only the people can give the answer. And, it may get worse before it gets better.

Finally, it is not merely a matter of the survival of public education. It is a matter of the survival of our country, our government, our social order, our right to life, liberty, and the pursuit of happiness. Let the schools fall and we lose all. Give the schools their rightful place in our standard of values and the future is unlimited.

Nutrition And The Solution Of World Health Problems

Cecilia Schuck

Food and Nutrition Research South Dakota State College, College Station, Brookings

THE GREAT ENGLISH statesman, Disraeli, once said, "The health of the people is really the foundation upon which all their happiness and all their powers as a state depend." Concern with the solution of health problems, as well as those of political and economic import, has in recent years become international in scope. The founding of the World Health Organization (WHO) as an agency of the United Nations bears testimony to this fact. It is now clearly recognized that the food available to and the nutritional status of a people are inseparably linked with their well being, vigor and ability to progress. This belief finds implementation in another United Nations agency, The Food and Agriculture Organization (FAO) particularly in its Committee on Nutrition, which works jointly with the Committee on Nutrition of the World Health Organization. It is interesting to note that at the annual meeting of the American Public Association at Atlantic City, in October 1959 there were 87 international visitors representing 38 different countries including the U.S.S.R. The theme of the convention "Public Health Is One World" expresses the spirit of the group. Among the health problems discussed nutrition per se not only occupied an important place on the program but it was implicated in a number of discussions on disease prevention and general health improvement here and elsewhere. Five international congresses on nutrition have convened in recent years. The fifth was held in Washington, D.C., September 1 to 8, 1960. In his welcoming address to the Congress President Eisenhower referred to nutrition as the science that underlies human health throughout the world. During the sessions that followed recognition was given to problems involved in world

food production and distribution to meet nutritional needs of the present and ever increasing population.

The medical profession has only recently come to recognize the full importance of nutrition in both disease prevention and cure. Although many disorders are not primarily nutritional in origin the nutritional status of an individual may affect both his susceptibility to disease and his powers of recovery.

Malnutrition and its accompanying health hazards arise from a number of causes. Food deficiencies and food excesses are the principal ones, although abnormal food utilization resulting from metabolic disturbances may also be an underlying cause. It is with the first of these that there is chief concern from a world health standpoint. The lack of sufficient food to meet nutritional needs has created a serious situation in the heavily populated less well developed areas of the world. But the more advanced countries have not entirely escaped nutrition problems. Their abundance of food and high economic level have contributed to a newly recognized health hazard, overweight. Overweight has now come to be recognized by physicians as one of the predisposing factors in a number of diseases frequently encountered here and in the other more favored nations. Also, nutritional deficiencies, chiefly borderline in nature, do exist in the more advanced nations even in the midst of plenty. This might at first appear to be a paradox, but an explanation lies in the lack of information concerning nutritional needs or lack of motivation to put into use the available knowledge. Food faddism must also shoulder a part of the blame. The food cultist and those ready to take advantage of human gullibility have an unquestionable appeal to people, many of whom have not lost their childhood belief in magic.

Where food is plentiful and the economic level of people make adequate diets available for everyone, an effective program of nutrition education can contribute to the solution of many of the existing health problems.

Interest on the part of the United States in global nutrition has led to a number of nutrition surveys in different parts of the world. Many of these surveys have been carried out by what is known as the Interdepartmental Committee on Nutrition for National Defense (ICNND) which was established in 1955. National Defense implies something more here than military defense. It encompasses defense of life, liberty and well being of people. Our Department of State, Defense, Agriculture, Health, Education and Welfare, the International Cooperation Administration, and the Atomic Energy Commission have all cooperated in formulating the plans of this committee. Its purpose is to give assistance in foreign countries to the solution of nutrition problems. But basic to assistance in all situations is some knowledge of the nature of the problems involved. And so survey teams composed of physicians, biochemists, food service and nutrition specialists, dentists, food technologists and agricultural economists have gone into countries needing help with nutrition and health problems upon the request of governments of these countries. According to a recently published report 16 countries including 5 in the Far East, 5 in the Near East, 4 in South America, 2 in Africa and 1 in Europe have availed themselves or plan to do so, of the opportunity of receiving assistance. The plan includes training of local professional personnel by inviting them to work side by side with the U. S. team members on the nutrition survey. An important part of the program is a follow up phase with consultant services available to aid in the solution of specifically defined problems. Recognition is given to the importance of cooperating with the governmental agencies of the foreign countries responsible for health, agriculture and education as well as with the U. S. missions and United Nations agencies working in these Countries.

In the earlier surveys by the Interdepartmental Committee on Nutrition for National Defense only men in the armed forces were examined in an effort to obtain a nutritional appraisal of the people of an area. The ease of sampling and transportation explains in part this procedure. In studying the armed forces information was obtained on food supply, habits and customs which it was thought were indicative of what might be found in the civilian population. The armed forces also provided a group in which programs for nutritional improvement could be implemented and tested with relative ease. The more recent surveys have been enlarged to include civilian populations.

The information obtained by the surveys just described combined with that obtained by individual investigators and other groups in earlier and later years have indicated need for untiring efforts to raise the nutritional and health levels in large areas of the world.

Nutrition surveys have revealed numerous evidences of the ill effects of malnutrition. First among the conditions demanding attention is that of general undernutrition. The cause of this is evident. The people do not have enough to eat and a chronic state of semi-starvation exists. If there were more food available to these people, irrespective of the quality of the food, many nutrition problems would disappear. True, food production of the world has increased since World War II, but this increase has occured chiefly in the countries where the food supply was already sufficient to meet the needs of the population.

The problem of food shortages is being attacked on two fronts, through efforts directed toward the improvement of agricultural methods in the underdeveloped nations and through a sharing of the surplus foods by the more advanced nations. There are many complexities associated with the latter, but it is hoped that some degree of success will be attained under President Eisenhower's "Food for Peace Plan," a plan designed to benefit both the countries with food surpluses and those with shortages.

Second to undernutrition the most prevalent and serious deficiency is protein deficiency. This exists both as a qualitative and quantitative lack. Where the total quantity of protein is sufficient, it often fails to meet the nutritional needs of people from a qualitative standpoint. This situation is marked in areas of the world where people subsist largely on starchy roots or where a single cereal product supplies most of the protein of the diet. The ill effects in the adult population are less evident and far less serious than with the children, especially at ages one to four years. They are not only greatly retarded in growth and general development but a serious condition known as kwasiorkor results. This, together with infections which often precipitate or are superimposed upon the disease, make the death rate of young children exceedingly high. Kwasiorkor is widespread in Central Asia and Africa, Indonesia and other scattered areas. Clinically recognized kwasiorkor does not, however, represent the problem in its entirely for there are many instances of protein malnutrition without frank symptoms of the disease in the child population of all of these areas. A partial solution of the problem lies in increasing milk production and conservation in underdeveloped parts of the world and making more of the surplus fat free milk supply of this country available through the United Nations International Children's Emergency Fund (UNICEF) for child feeding programs. Recently the Institute of Nutrition of Central America and Panama (INCAP) has developed several vegetable mixtures or combinations of plant products with a protein quality equal to that of milk. These mixtures, which are low in cost, have proven to be entirely satisfactory for the treatment of kwasiorkor. The progress made by INCAP in alleviating the shortage of good quality protein in Guatamala should constitute a stimulus for further efforts along this line. The wider use of similar mixtures, along with increased availability of milk, fish and other animal protein sources offers hope for eventually stamping out protein malnutrition and its accompanying ill effects. A proposal has also recently been made for combining flour prepared from dried fish with cereal products. Still another measure under consideration is the addition of lysine, an essential protein unit (and of the amino acids) to wheat flour where the latter is a staple product, if and when the cost permits.

The classical vitamin deficiency disease, xerophthalmia, beri-beri, pellagra, scurvy and rickets still persist in the underprivileged parts of the world in spite of the fact that means of prevention are well known. Symptoms of a sixth vitamin deficiency, riboflavin, are also frequently observed. Xerophthalmia, which results from a severe lack of Vitamin A or its precursor, carotene (found in green and yellow vegetables) accounts for much of the preventable blindness seen in malnourished children.

It is of little avail in the areas where xerophthalmia occurs to recommend some of the common sources of vitamin A used here, such as whole milk, butter or fortified margarine because these products are largely unavailable and the eating practices of the people are such that they would be little used. Bread is often not a common article of diet and when eaten it is without a spread of any kind. If the deficient vitamin is to be supplied through fats it would have to be done through fortification of cooking fat. Until, however, technical developments make this feasible, reliance will have to be placed chiefly on green and yellow vegetables of native origin for the prevention of xerophthalmia. Likewise in the combat of scurvy native fruits representing sources of vitamin C must be produced and more widely used.

In the countries where a large part of the diet consists of refined cereals, enrichment with the B-vitamins, thiamine, riboflavin and naicin, offers the best means of combatting beri-beri, reboflavin deficiency and pellagra. In the rice eating countries, where beri-beri accounts for much ill health and many infant deaths, the preventive value of enriching rice has been clearly demonstrated. Likewise in the maize eating countries, where pellagra constitutes a serious health problem enrichment of cornmeal can provide an effective weapon against this disease. Unfortunately, the enrichment of rice poses greater technical difficulties than the enrichment of flour or cornmeal. Both have for some years been enriched in this country with thiamine, riboflavin, niacin and iron with beneficial results. This measure was deemed necessary to insure an optimal intake of these nutrients by some of our population, even through we have many food sources other than enriched bread.

In addition to the widespread suffering caused by protein and vitamin deficiencies, anemias, some of which appear to be due to lack of iron in the diet, menace the health of people and lower their vitality. Also endemic goitre due to low iodine content of food and water still prevails. Inclusion of iron as an enrichment ingredient of cereals and the use of iodized salt are preventive measures. The latter has virtually brought about disappearance of endemic goitre in some areas.

If we are to realize the worthy ambition of raising the standards of living in the less privileged parts of the world we must among other things devote time and attention to finding ways and means of achieving a higher nutrition and health level of the people. We must provide more and more technical help for the improvement of agriculture so as to produce more native foods, and there must be a wider sharing of our surplus foods. Along with this, education in the use of these foods can accomplish much. Governments must be awakened to the realization of the importance of supporting programs that will make use of all of the available means for the nutritional betterment of their people. It is only through some degree of success in this realm that we can hope for a peaceful world. Hungry half ill people do not make good peace abiding neighbors. "Food for peace" is not an idle phrase It has a true ring. It might well be expanded to read "Food and health for peace."

Mathematics And Modern Thinking

Will E. Edington

Emeritus Professor and Head of the Department of Mathematics and Astronomy, DePauw University, Greencastle, Indiana

MATHEMATICS HAS BECOME worldwide in its study and interests. Latest reports indicate that the mathematics magazine "Mathematical Reviews," Volume 22, for 1961, will contain over 11,000 reviews of research articles and books on mathematics and mathematical physics that are expected to be published that year throughout the world. It will be necessary to publish this volume in two parts since it will contain over 2,400 pages. These 11,000 mathematical articles and books will represent translations from numerous languages: Russian, Japanese, German, French, Italian, Spanish, Dutch, Chinese, and others. The volume for 1960 contains 8,000 reviews and 1,652 pages. Part of the tremendous increase will be due to a more comprehensive coverage and translation of mathematical literature, but the greater part will be due to a more intensive study and development of the subject itself. The first volume of "Mathematical Reviews," published in 1940, contained only about 2,000 reviews and 400 pages.

The UNESCO survey for 1955-56 reported a total of 140,744 persons studying outside their countries, of whom 36,494 came to the United States; 16,877 to France and 12,300 to U.S.S.R. During the school year 1958-59, 47,245 students from 131 countries registered in United States colleges and universities, of whom 15,823 were from the Far East, 10,249 from Latin America, 6,619 from the Middle East, and 6,601 from Europe. Twenty-three per cent of the total registration of Massachusetts Tech was foreign students. In that year there were 1,937 foreign faculty members working in U.S. colleges and universities, of whom 198 were at Massachusetts Tech. The United States had 1,842 professors working in colleges and universities abroad. In 1959-60, in mathematics alone, there were 138 visiting professors from 33 nations working in the U.S. colleges and scientific laboratories. In the 1957-58 edition of "Study Abroad," this UNESCO handbook listed 75,000 international scholarships and fellowships available for study in 83 countries and dependencies.

What is the meaning and significance of this tremendous movement that involves the bringing together of all the races and colors of human beings with their widely spread differences in historical backgrounds, cultures, customs, religions, philosophies and aspirations? It is not hard to believe that future historians will recognize the twentieth century as the period of scientific achievement in all fields of human endeavor, a Reformation and Renaissance of worldwide consequences. Scientific achievement is not concerned with the color of a man's skin, his religious beliefs, his political ideologies, his racial origin, but only with his logical thinking that leads to tangible, consistent results. To be sure his inherited beliefs and erroneous interpretations will often cause man to falter in recognizing the next step needed to bring scientific achievement. Progress will come only as he realizes that all scientific achievement is due to his discovery of how the Creator has manifested Himself in His creation and then man must act and adjust himself and his thinking accordingly. For example, traditional beliefs were and still are powerless to influence the laws of motion.

Man can only discover and then have faith sustained by the consistency of the laws.

Much of this emphasis on science, and mathematics in particular, has been brought about by the "cold war," the physical, engineering, physiological and psychological problems of space travel, nuclear developments and dangers, and worldwide welfare. The great nations have set up and financed tremendous laboratories for research and testing, and in the United States especially this has been supplemented by our giant industries, great Foundations, both Federal and private, and our universities. Many discoveries based on pure and applied mathematics have been made. Urgent appeals for trained mathematicians, and scientists in general, have led to intensive studies of our mathematics and science curricula in our whole public educational system from the first grade all the way up through post-graduate work. Such organizations as the School Mathematics Study Group, the Secondary School Curriculum Committee of the National Council of Teachers of Mathematics, the Commission on Mathematics of the College Entrance Board, the University of Illinois Committee on School Mathematics, the University of Maryland Mathematics Project, the Committee on the Undergraduate Program of the Mathematical Association of America, and others, are actively at work in an attempt to improve our mathematics production through more effective teaching, complete revisions of textbook materials involving the abandonment of much traditional material offered in the past, and the introduction of new concepts and new methods of approach and presentation through less problem solving and more emphasis on the meaning and application.

This change in method of approach to mathematics is rapidly being brought to our public schools. For the summer of 1960 the National Science Foundation made grants of over $21,000,000 to finance 379 summer institutes in 265 educational institutions in all fifty states, the District of Columbia and Puerto Rico. 316 of these institutes were open to high school teachers only, 37 for college teachers only, 24 for both high school and college teachers, and two for technical institute personnel. The institutes varied in length from four to twelve weeks and approximately 16,000 high school teachers and 2,000 college teachers, chosen by the Institutes, received training in mathematics, science and engineering, presented with the modern approach. Each teacher received not more than $75 per week for the duration of the institute, plus allowances for travel and dependents.

Also for the school year 1960-61 the National Science Foundation awarded grants for $9,200,000 to 33 colleges and universities to support Academic Year Institutes for science and mathematics teachers. Some 1,600 experienced teachers are at present enrolled and are receiving $3,000 each with additional allowances for books, travel and dependents. The great majority of these trainees are secondary school teachers and are following a program for improving their subject-matter knowledge in science and mathematics. This is the fifth year for this program.

In our own state the Indiana School and College Committee, with the approval of the State Department of Public Instruction, is sponsoring testing programs in the classroom of textbook materials prepared by Ball State Teachers College, the University of Illinois Committee on School Mathematics, the School Mathematics Study Group, and the University of Maryland Mathematics Project. The Ball State material for grades 8 to 10 has been taught during the past three years by some thirty teachers in schools in Eastern Indiana. The Illinois Committee mathematics courses I and II have been taught during the past two years in Hammond High School in a few classes with a number of other classes, as controls, using more traditional texts. The School Mathematics Study Group, initiated in 1958 by the American Mathematical Society on a national basis, has organized a number of writing groups to prepare text material for grades 7 to 12. This program is financed by the National Science Foundation and the text material is being tested in the class room and made generally available on a nation-wide basis. During the past two years textbook material prepared according to the University of Maryland Mathematics Project has been tested in grades 7 and 8 in School No. 84, in Indianapolis. In all these programs the material is being revised as experience dictates through conferences of the teaching and writing groups.

Obviously the effects of such comprehensive programs will in time become evident in our high schools and colleges. And plans are being made to extend similar programs for the training of all elementary school teachers. A recent report, "Policies for Science Education," recommends that science be taught beginning in the kindergarten and continued through the twelve grades. This report is the result of the Science Manpower Projects of Teachers College, Columbia University, and is supported largely by a group of industries and foundations.

In the beginning the changes in the mathematics subject-matter will not be extreme, but certain concepts will be emphasized. Thus a straight line will no longer be defined as the shortest distance between two points or as the path of a point moving in a constant direction, but as a "set of points," where the word "set" is defined as collection of "elements," in this case "points," having certain properties. The intersection of two lines is a set composed of one point, and if the lines are in space and do not intersect, the intersection

set is said to be "empty." To one trained in traditional geometry this may seem strange and far-fetched, but the idea "set" has become so fundamental in modern, advanced mathematical thinking as to justify its early introduction. To the beginner in mathematics such concepts will not seem strange but will be accepted in the same way that the technical nomenclature of automobiles, airplanes, rockets, etc., are learned and freely used. In fact the change is roughest on the teachers trained only in the traditional materials, and time and patience will be required for such teachers to adjust to the new conceptual approach. In time all teachers of mathematics will be expected to know and use these concepts in their teaching, insofar at least as the concepts are used in the grades they teach.

High school algebra will be taught with new concepts of numbers, treated as "elements" of a "set" which in turn are related in a "one to one correspondence" with a "set of points" on a line, and ideas of "infinite," "coordinates," "group," etc., are introduced almost immediately. Expressions like 5+3=8, 7+2=10, $x^2-5x+6=0$, are called "sentences" which may or may not express a truth. "x" is analogous in our thinking to words like "it," "that," "who" in every day usage. The "answers" found for the values of "x" in $x^2-5x+6=0$ constitute a "set" composed of two elements "2" and "3." Such an approach makes much easier a logical understanding of "irrational" and "imaginary" numbers.

The two World Wars emphasized the value of education in this scientific age and the change in approach is inevitable. Just as for travel the horse was superseded by the train, which in turn was superseded by the automobile, and the airplane, so must the old procedures in education for attaining the desired results be superseded by more effective, time saving methods. Just as the electric typewriter, mimeograph, photostat, IBM accounting machines, nucleonic computing machines, etc., have revolutionized business and scientific procedures, so, in time, the newer educational approaches will lift the level of logical thinking and understanding throughout the whole world.

What Are "Fads" in Education?—Continued from page 79

it would follow that "the schools' task is primarily transmission of knowledge in the basic subjects." However, the citizens of this country have insisted that there are several legitimate goals of education, including the one proposed above, and that all are important if students are to be properly prepared to function satisfactorily as citizens of a great nation in a world community.

2. *The schools should be expected to assume practically full responsibility for education.* While most people are interested in education, many become so busy with their own affairs that they neglect to take an active part in selecting school board members and tend to become concerned only when costs increase or something seems to be going wrong with the program. But education is a cooperative enterprise which must involve parents and other lay citizens as well as the board and staff. If the schools are not doing a good job, the community must share some of the responsibility for their shortcomings. The climate for learning should be the concern of all and unless that climate is favorable, the schools will be relatively ineffective and the community, state, and nation will be handicapped.

3. *All teachers need is a thorough knowledge of the subject matter they teach.* Those who accept this point of view would agree with the university professor who said: "A teacher who knows his subject will find ways to teach it." There seems to be a movement to try to convince people that all education courses are "soft," that they serve chiefly to prevent teachers from mastering subject matter and that anyone who has a degree in a subject field should be permitted to teach. But much has been discovered through research about how children grow and develop, how they learn, factors that facilitate or handicap learning, and other matters involved in teaching. Knowledge and understanding of subject matter are important but equally important are knowledge and understanding of children and how they learn. To over-emphasize or omit either would handicap many children and detract from the success of the educational program.

4. *Teachers could and would do a better job than they are now doing if administrators would let them alone; administration should, therefore, either be eliminated or restricted to matters involving routine management.* A university chemistry professor recently said: "I think public education is too important to leave to the administrators," — a statement that demonstrates his ignorance of the processes of public education which certainly have not been left to administrators. For many years, school boards in this country attempted to operate schools without the services of professionally prepared administrators. Experience and studies showed it could not be done satisfactorily so every school system of any size now has a superinten-

dent. Of course, some administrators have been ineffective and a few have blocked progress, as sometimes has happened in business and industry. However, most have provided the leadership needed for developing better schools. An attempt to discredit administrative leadership, rather than to improve it would constitute an unfortunate step toward weakening schools and reducing their effectiveness.

5. *Reading should be taught by the phonic method.* This procedure was used for many years as the chief and sometimes the only method for teaching reading. It has a definite place in all good school programs but, like many other things, is not a panacea. Research shows that there are other methods which should be used to precede or to supplement phonics. The same method will not work satisfactorily with all children. The best school systems, therefore, are attempting to use the procedures that are most appropriate and, of course, include phonics as one of these.

Many other illustrations could be given of proposals which, if accepted, would constitute new fads or a return to some of the old fads in education. These come from many sources. Some writers have charged that there is a "conspiracy among educators" to weaken the educational program, to promote courses and methods that are designed to make learning easy for children and thus fail to stimulate and challenge them. There is certainly no such conspiracy. Educators, like lay citizens, have many different ideas and points of view. Most educators, however, are seriously interested in developing a good program, eliminating fads, and improving quality of education throughout the country. If lay citizens and educators can find better ways than have been used in the past to cooperate, to test ideas, and to effect needed improvements, there is no question but that the quality of education can and will be improved.

The Function of the Laboratory School in the Teacher Training Program

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School teachers' feeling vulnerable to criticism. Suggestions for improvement in communication included joint meetings of college and Laboratory School people, visits by the college staff, cooperation in research, orientation sessions each semester, and college teachers' doing some teaching in the Laboratory School.

Recently the author attempted to make personal contacts—conferences, interviews, and visits—with each Laboratory School teacher during the period that he used the school in conjunction with one of his courses. The fact that this practice received no favorable comment either on the questionnaire or by vocal expression of approval, leads to a questioning of this practice. Too, there is a limit on how much of such face-to-face contact can be used without infringing on the time the Laboratory School teacher needs for other work. Joint meetings of the college and Laboratory School staffs or joint committees probably would serve to increase communications better than individual meetings.

The principal aim of this article has been to point up some of the problems that have arisen in the use of the Indiana State Laboratory School in the teacher education program. There are, however, certain conclusions or recommendations that can be made in summary. These are presented as suggested means of alleviating the problems rather than as mandatory changes that should be made.

1. The function of the Laboratory School should be a subject of continual study. It would be wise to appoint a committee of Laboratory School and college teachers to perform this service.
2. To keep the laboratory experience program running smoothly there should be a coordinator of laboratory experiences who would plan and work out the mechanics of the over-all program. His office would serve as a clearing house for all aspects of the program, and he could be a trouble-shooter when problems arise.
3. The mechanics of the laboratory experience program should be greatly simplified. As a first step the schedule of classes of the Laboratory School should be brought closer to that of the college. There is also a need for simplification and standardization of the paper-work involved. Much has been accomplished in this area, but still more needs to be done.
4. The student-teaching function of the Laboratory School should be discontinued in favor of more emphasis being given to the pre-student-teaching program.
5. The present emphasis on reasearch and experimentation should be continued with the function of the Laboratory School in the teacher-training program being one rich area in which research and experimentation can be carried on.

Such a list of recommendations is, at best, only

partial, but it is hoped that it will point the way toward policies and practices in the use of the Laboratory School as an ever-increasing part of the teacher-training program of the college.

Bibliography

1. The Association for Student Teaching, **Function of the Laboratory School in Teacher Education.** Thirty-Fourth Yearbook, The Association: 1955.

2. Council on Professional Laboratory Experiences, Laboratory School, Indiana State Teachers College. "A Study of the Utilization of the Laboratory School by Members of the College Faculty." Unpublished paper, 1957.

3. Hughes, Otto. **The Role of the Campus Laboratory School.** Indiana University Division of Research and Field Services: 1959.

4. Hunsucker, Florise. "The Council on Professional Laboratory Experiences." **The Teachers College Journal,** XXVIII, 74-79.

5. Lang, Duaine. "Current Theory and Practice in Connection with the Function of the Campus Laboratory School." **Educational Administration and Supervision,** XLV, 36-44.

6. Lynch, William O. **A History of Indiana State Teachers College.** Indiana State Teachers College: 1946.

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lessons and teachers presented during the regular school year.

(3) A three semester hour course in "The Use of Television in Classroom Teaching" has been passed by both the undergraduate and graduate committees and will be offered in the College curriculum for the first time beginning in February, 1961. Credit for this course may be received either in the School of Education's Department of Education and Psychology or in the Department of Speech.

The airborne program is not the only concern of the College administration and faculty when they study the educational uses of television. The staff is already exploring the uses of the medium in the teacher training program and in linking the rapidly expanding campus by closed-circuit television to simplify all-campus projects.

At Indiana State Teachers College we realize that television is a powerful medium of communication and, therefore, must have a role in the educational process. Precisely what this role is to be is now being determined. As a leader in the education and training of teachers, it is most important that the teacher's college, and Indiana State in particular, be instrumental in the determination of that role.